

CLAIMS

1. A connecting device for connecting a first workpiece having an interior space (22), in particular a bar-type hollow profile (10), to another such workpiece by means of a screw or similar member (50), the shank (54, 55) of which passes through an opening (20) of the workpiece and can be inserted into an opposing element (60) in the interior space, characterized in that the shank (54, 55) of the clamping screw (50) passes through a sleeve (36) of the connecting device (34), which sleeve is fixed in a longitudinal groove (20) of one workpiece (10) such that a threaded area (55) of the clamping screw protrudes beyond the face (14) of the workpiece and is provided with a screw head (60) at a distance therefrom, wherein said screw head is designed such that it can be inserted into an undercut longitudinal groove (20) of the other workpiece (10).

2. The connecting device as claimed in claim 1, characterized in that the sleeve (36) is arranged such that it can be removably fixed in the longitudinal groove (20) of the workpiece (10).

3. The connecting device as claimed in claim 1 or 2, characterized in that the sleeve (36) is connected to the workpiece (10) by a groove/spring system (32/40) which runs transversely to the longitudinal axis (A) of said workpiece.

4. The connecting device as claimed in claim 3, characterized by lateral outer ribs (40) of the sleeve (36), by means of which radial grooves (32) can be made in the workpiece (10) or which are designed such that they can be inserted in radial grooves (32) of the workpiece (10).

5. The connecting device as claimed in claim 4, characterized in that the outer rib (40), which is approximately triangular in cross section, merges with its rib faces (42) into shaped channels (46) of the sleeve outer face (39), wherein preferably the rib crests (41) of a number of outer ribs (40) run parallel to one another or define a common annular contour.

6. The connecting device as claimed in claim 4 or 5, characterized by at least three groups of outer ribs (40) parallel to the longitudinal axis (A_1) of the sleeve (36), which outer ribs, in the fixing position, are assigned to radial grooves (32), and the latter are made in the groove bottom (24) and in facing surfaces of the longitudinal groove (20) on shaped ribs (18) which delimit the profile side face (16).

7. The connecting device as claimed in any of claims 1 to 6, characterized in that one sleeve edge (47) of the sleeve (36) fixed in the workpiece (10) is approximately flush with a face (14) of the workpiece.

8. The connecting device as claimed in claim 7, characterized in that a ring (48), which is made of elastic material and surrounds the threaded area (55) of the clamping screw (50), is arranged between the sleeve edge (47) and the screw head (60).

9. The connecting device as claimed in claim 7 or 8, characterized in that, in the clamped position, the screw head (52) of the clamping screw (50) bears against the other sleeve edge (47_t) of the sleeve (36).

10. The connecting device as claimed in claim 9, characterized in that the screw head (52) of the clamping

screw (50) has on its end face a blind hole (53) of polygonal cross section.

11. The connecting device as claimed in any of claims 1 to 10, characterized in that the screw head (60) which can be screwed onto the clamping screw (50) is designed in a plate-shaped manner, wherein optionally its length (n) is somewhat shorter than the width (f) of the groove space (22) of the undercut longitudinal groove (20) which receives it.

12. The connecting device as claimed in any of claims 6 to 11, characterized in that the shaped ribs (18) delimiting the longitudinal groove (20) are designed in a hook-shaped manner and the faces of the hook ends (19) which are directed toward the groove bottom (24) are designed as an abutment for the screw head (60).

13. The connecting device as claimed in claims 8 and 12, characterized in that the height of the hook ends (19) corresponds approximately to the height of the ring (48) made of elastic material which is mounted between them.

14. A connecting device for connecting a first workpiece having an interior space (13), in particular a bar-type hollow profile (11), to another such workpiece by means of a screw or similar member (86), the shank (96) of which passes through an opening (15) of the workpiece and can be inserted into an opposing element (92) in the interior space, characterized in that inserted into the interior space (13) of the workpiece or hollow profile (11) of rectangular cross section is a connecting device (70) which touches the inner faces of the four side walls (17) thereof, which connecting device is fixed in the hollow profile such that one of its faces is approximately flush with one of the faces (14) of the hollow profile, and a

threaded area (90) of the clamping screw (86) protrudes beyond this face into the interior space (13) of the other hollow profile (11) and is connected there to an opposing member which is designed as a screw stud (92) and bears against the inner face of this other hollow profile.

15. The connecting device as claimed in claim 14, characterized in that the connecting device (70) comprises a shaped piece (72) which has the shape of a cross in cross section, and the side edges (75) of the four shaped piece ribs (74) thereof are provided with a screw hole (80) for a screw or screw bushing (82) which passes through the side wall (17) of the hollow profile (11).

16. The connecting device as claimed in claim 15, characterized in that the side edge (75) of the shaped piece rib (74) is provided with at least one channel-like incision (78) which runs transversely to the longitudinal axis (A_1) of the shaped piece (72), wherein optionally the two side walls (77) of the incision (78) are inclined at an angle (x) with respect to one another such that the cross section of the incision expands outward.

17. The connecting device as claimed in claim 16, characterized in that, in the clamped position of the shaped piece (72), the incision (78) receives a shaping (79) of the side wall (17) of the hollow profile (11), wherein preferably two incisions on opposite sides of the longitudinal axis (A_1) each receive one of the shapings.

18. The connecting device as claimed in any of claims 15 to 17, characterized in that a passage (84) for a retaining bolt (86) which forms the clamping screw (90) runs in the longitudinal axis (A_1) of the shaped piece (72).

19. The connecting device as claimed in claims 15 and 18, characterized in that the screw hole (80) in the shaped piece rib (74) opens into the passage (84) for the retaining bolt (86).

20. The connecting device as claimed in claim 18 or 19, characterized in that the retaining bolt (86) comprises, as clamping screw, a threaded bolt (90) integrally formed axially on a bolt body (87, 87_a).

21. The connecting device as claimed in claim 19 or 20, characterized in that at least one lateral trough (89) is formed in the bolt body (87) as a catch element for a screw bushing (82) or screw provided in the screw hole (80) of the shaped piece rib (74) (Figs. 11, 12), or in that the bolt body (87_a) comprises a peripheral constriction (Q₁), delimited by two bolt sections (89_a) tapering in opposite directions toward one another, as a catch element for a screw bushing (82) or screw provided in the screw hole (80) of the shaped piece rib (74) (Fig. 13).

22. The connecting device as claimed in any of claims 14 to 21, characterized in that the strip-like screw stud (92) has on its lower face (58_a) a central molding (94) and in the region thereof there is a central screw opening (100) for the threaded area (90) of the clamping screw (86), wherein optionally a round slot (96) is provided in the region of the central molding (94).

23. The connecting device as claimed in claim 22, characterized in that the upper surface (98) of the screw stud (92) is curved as part of a circle in cross section and/or in longitudinal section has two opposing oblique faces (97).

24. A connecting device for connecting a first workpiece having an interior space (13), in particular a bar-type hollow profile (11_a), to another such workpiece by means of a screw or similar member, the shank of which passes through an opening (15) of the workpiece and can be inserted into an opposing element (110) in the interior space, characterized in that the two workpieces or hollow profiles (11_a) of rectangular cross section are miter-cut and are placed against one another at right angles by their oblique edges (102), wherein, in the corner region of the interior space (13), at least two parallel angle brackets (104, 106) which fill the cross section of the interior space are fixedly connected to one another and to the hollow profiles by the screws or similar members.

25. The connecting device as claimed in claim 24, characterized by two angle brackets (104, 106) of approximately the same thickness (c_2), the bracket legs of which are in each case provided with a receiving hole (81, 81_a) for screws.

26. The connecting device as claimed in claim 24 or 25, characterized in that one angle bracket (104) is provided with screw holes (81) which pass through its bracket legs as receiving holes and the other angle bracket (106) is provided with blind holes (81_a) as receiving clips (Fig. 19).

27. The connecting device as claimed in claim 26, characterized in that the screw holes (81) of one angle bracket (104) run coaxially with the blind holes (81_a) of the other angle bracket (106) and with openings (15) in one of the profile side walls (17).

28. The connecting device as claimed in any of claims 1 to 27, characterized by at least one further feature disclosed in the description and/or drawing.